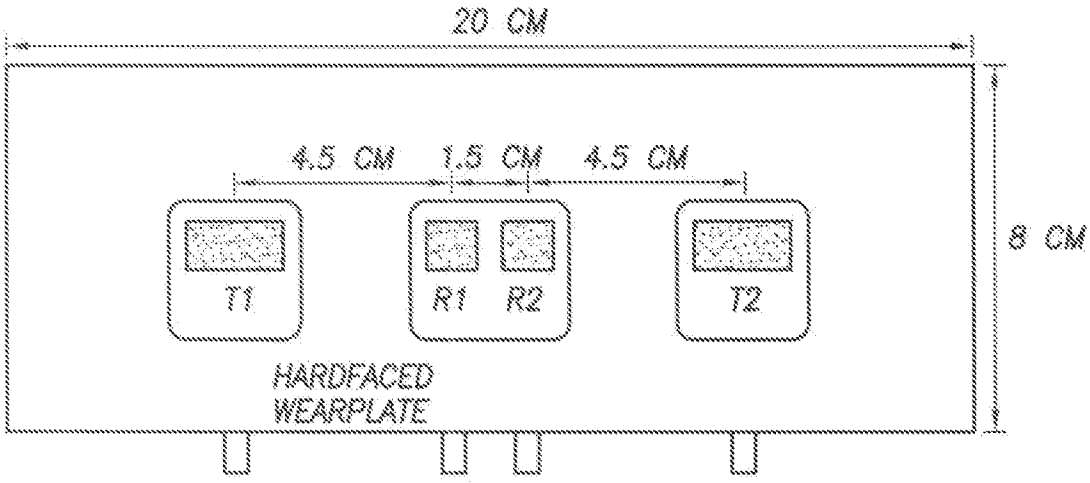

FIG. 1A
(PRIOR ART)

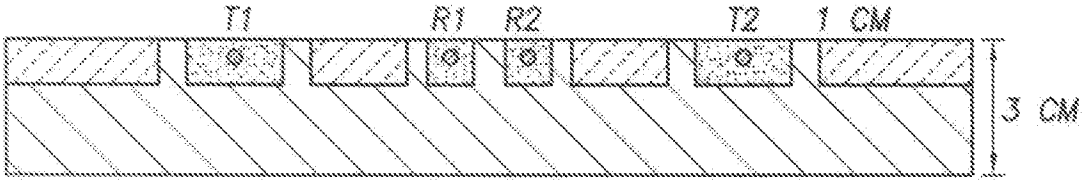

FIG. 1B
(PRIOR ART)

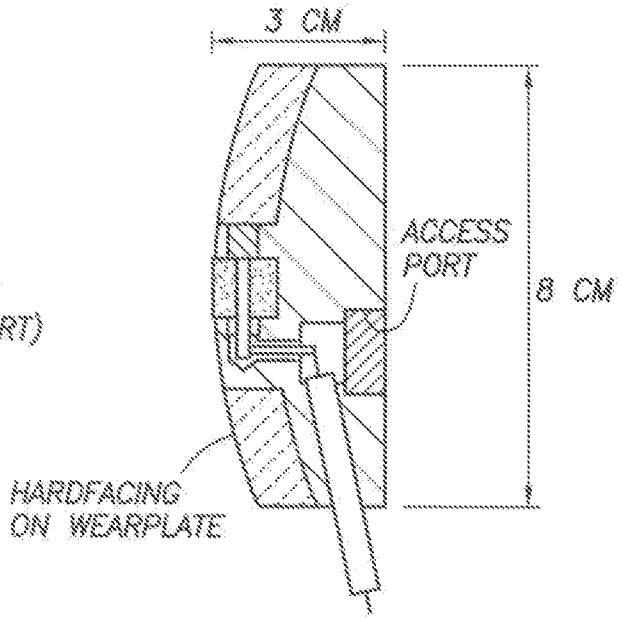

FIG. 1C
(PRIOR ART)

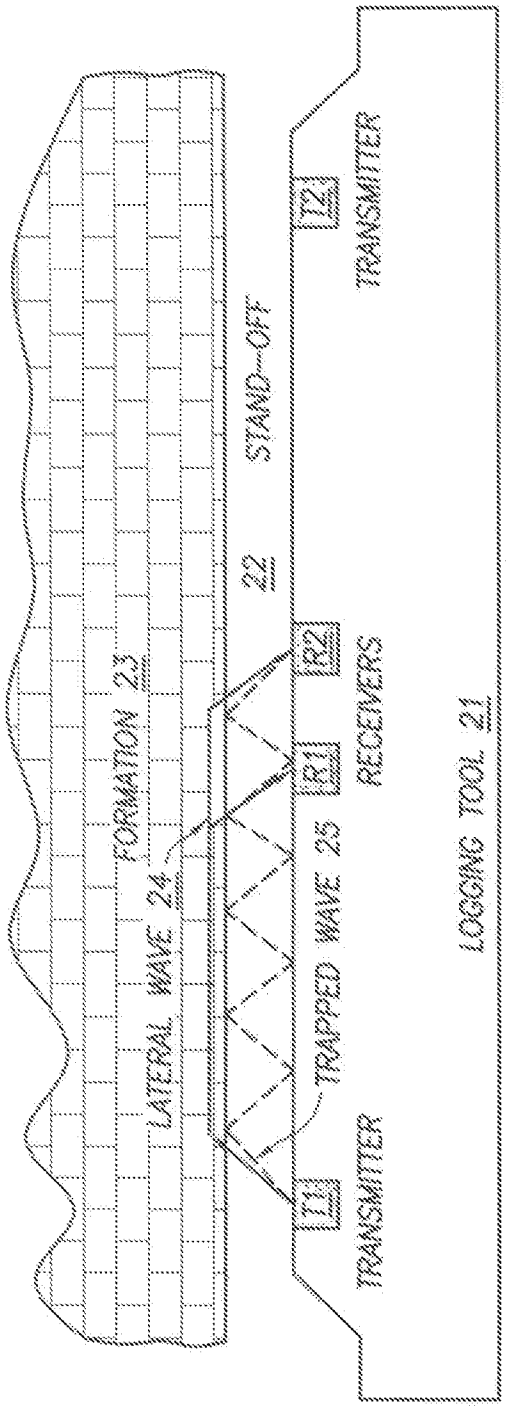
FORMATION 23
LATERAL WAVE 24
22
STAND-OFF
T2
TRANSMITTER
R2
R1
RECEIVERS
TRAPPED WAVE 25
T1
TRANSMITTER
LOGGING TOOL 21

FIG.2

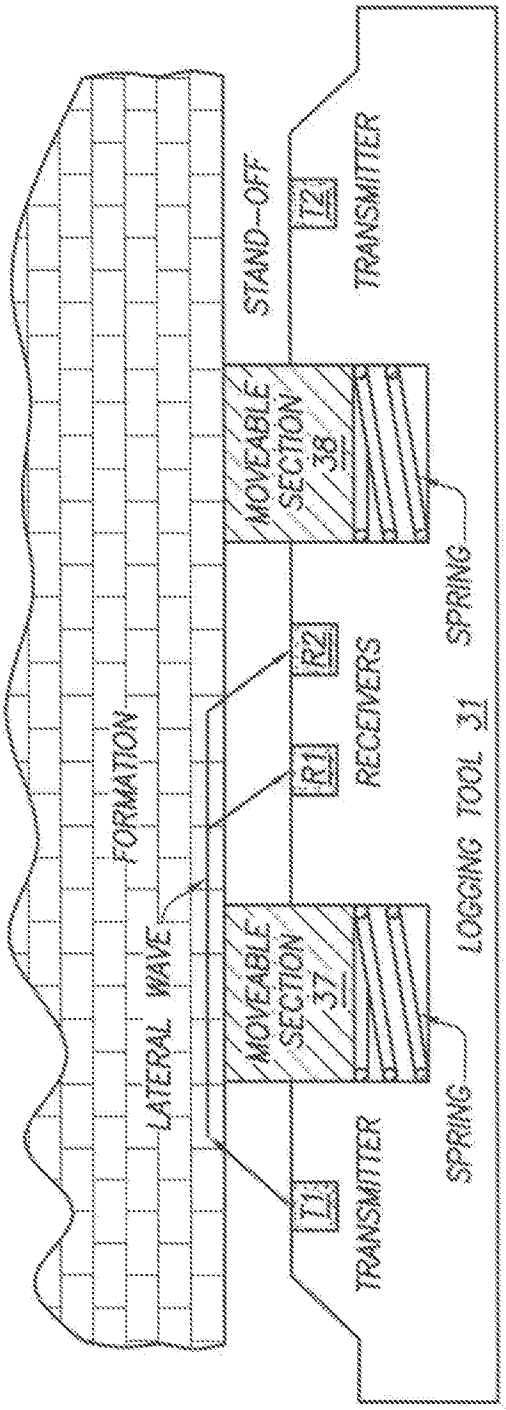
FORMATION
LATERAL WAVE
STAND-OFF
T2
TRANSMITTER
MOVEABLE SECTION 38
SPRING
R2
R1
RECEIVERS
MOVEABLE SECTION 37
T1
TRANSMITTER
SPRING
LOGGING TOOL 31

FIG.3

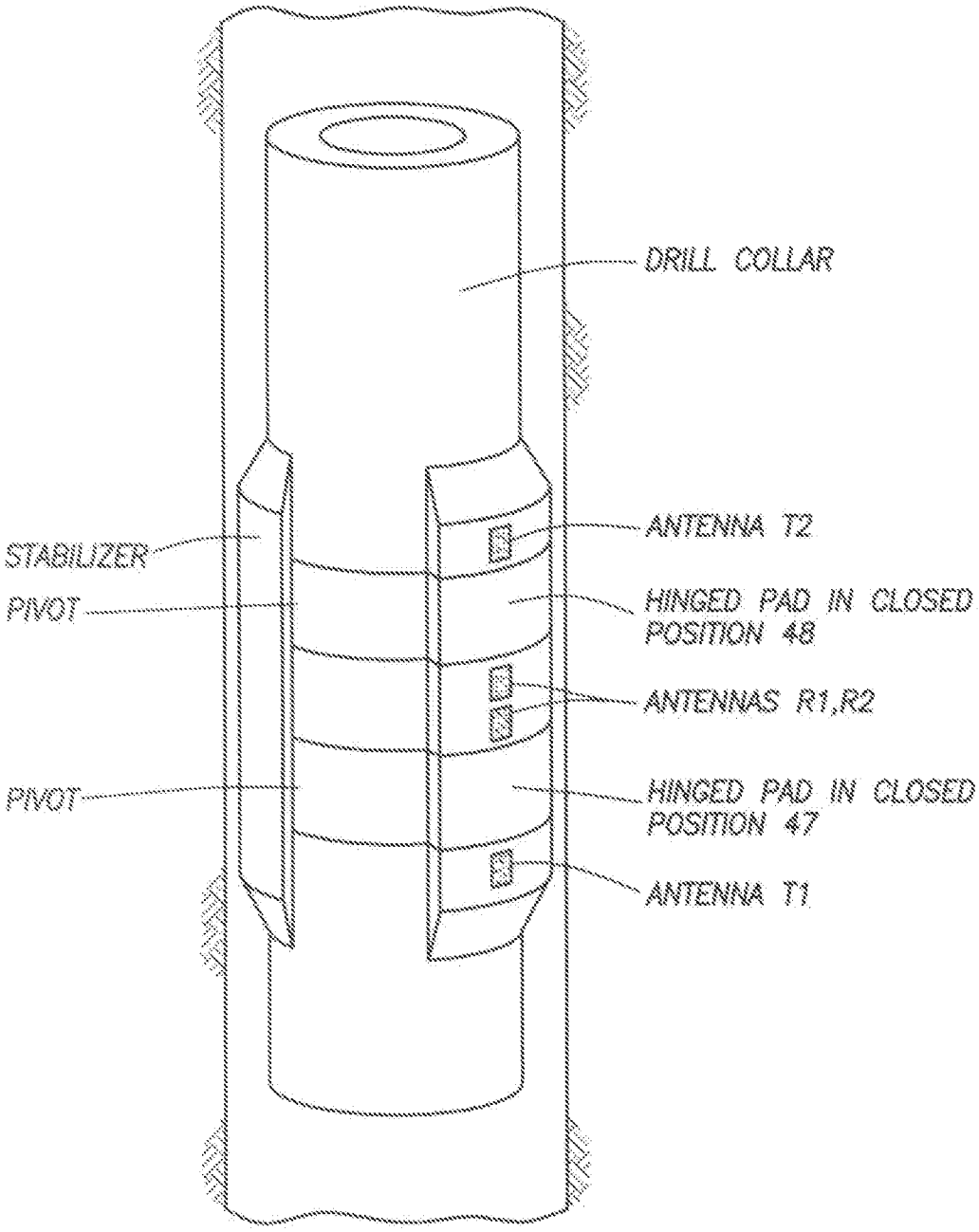
DRILL COLLAR
ANTENNA T2
STABILIZER
PIVOT
HINGED PAD IN CLOSED POSITION 48
ANTENNAS R1,R2
PIVOT
HINGED PAD IN CLOSED POSITION 47
ANTENNA T1

FIG. 4

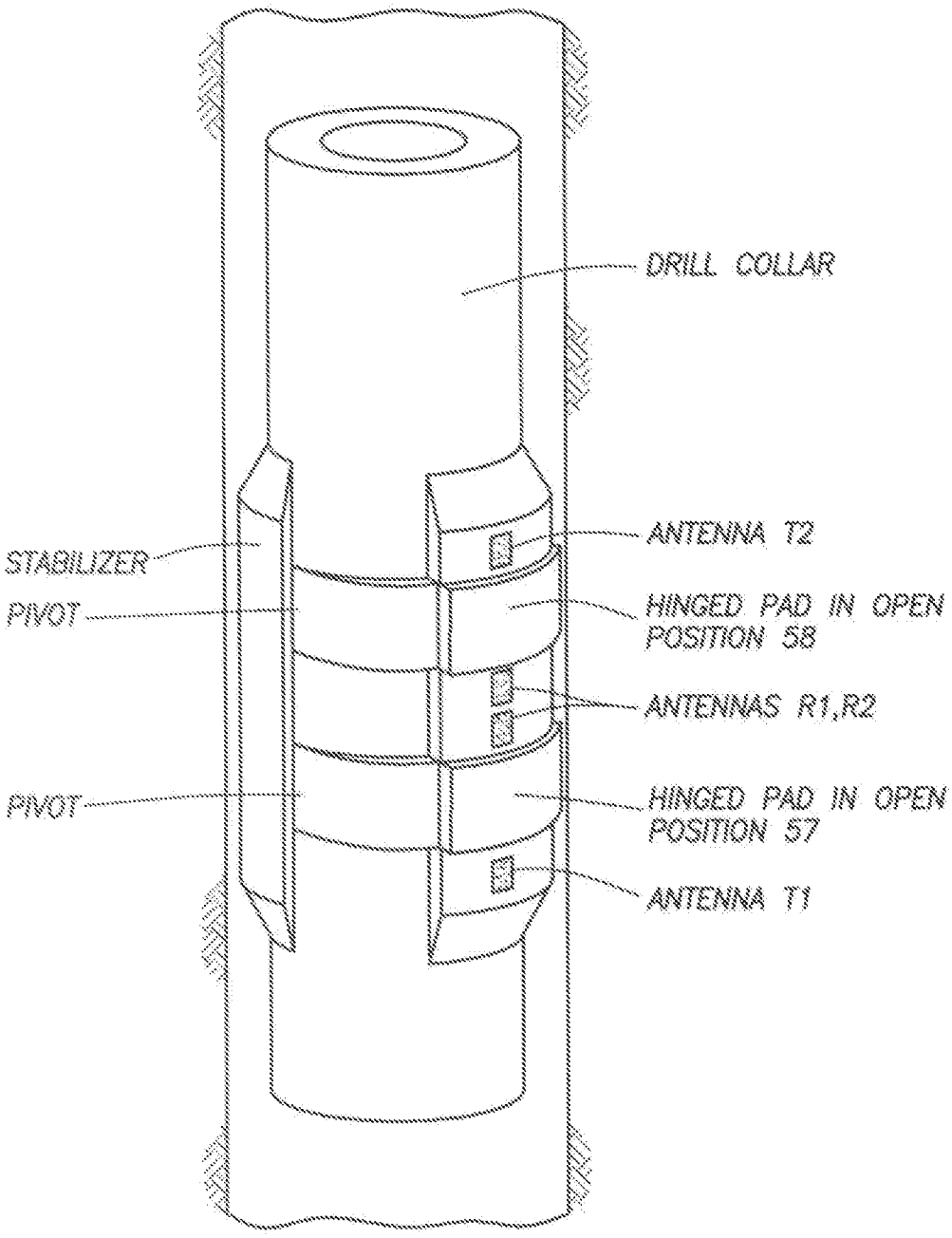
DRILL COLLAR
ANTENNA T2
STABILIZER
PIVOT
HINGED PAD IN OPEN POSITION 58
ANTENNAS R1,R2
PIVOT
HINGED PAD IN OPEN POSITION 57
ANTENNA T1

FIG.5

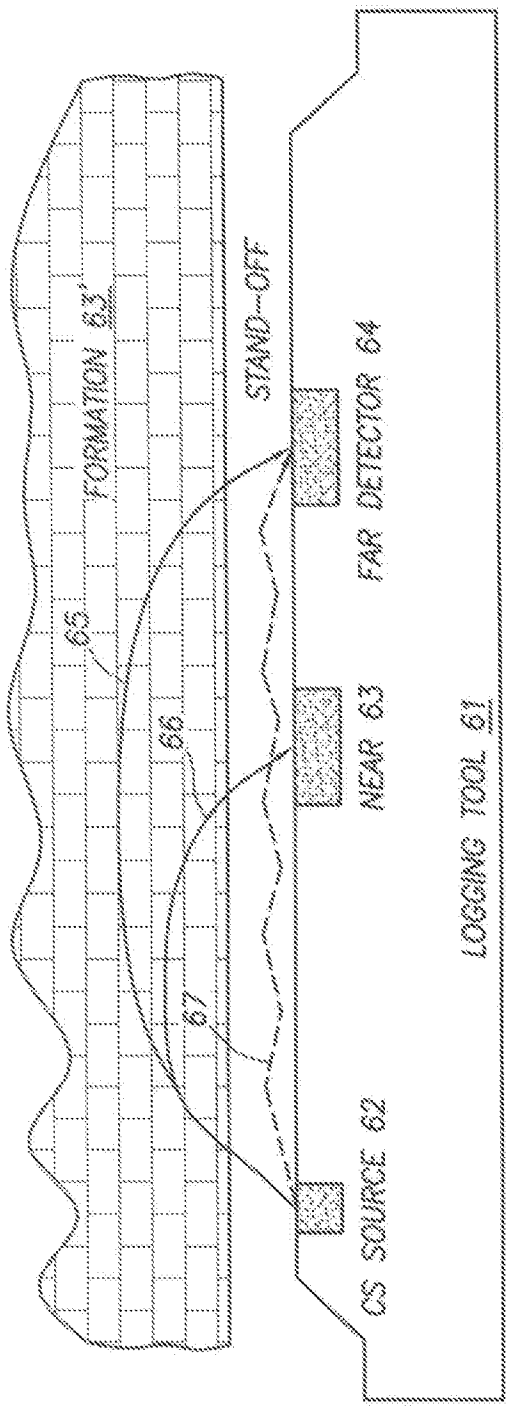
FORMATION 63'
65
66
67
STAND-OFF
FAR DETECTOR 64
NEAR 63
CS SOURCE 62
LOGGING TOOL 61

FIG. 6

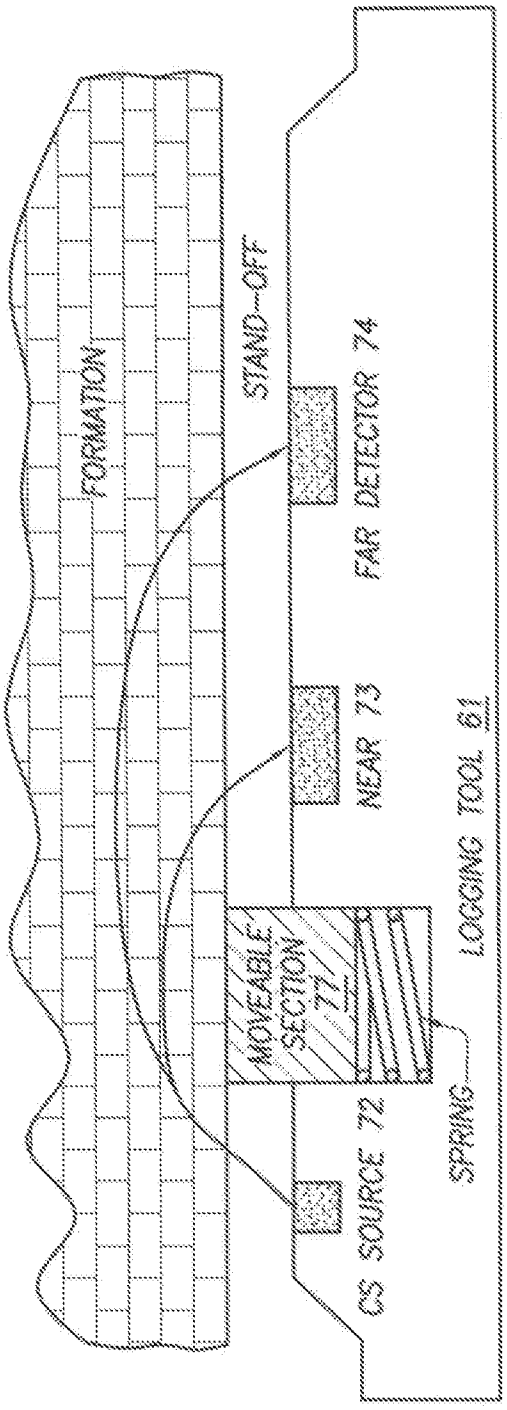
FORMATION
STAND-OFF
FAR DETECTOR 74
NEAR 73
MOVEABLE SECTION 77
CS SOURCE 72
SPRING
LOGGING TOOL 61

FIG. 7